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Into the Unknown

The world has never seen population ageing before. Can it cope?

[A] Until the early 1990s nobody much thought about whole populations getting older. The UN had the foresight to convene a "world assembly on ageing" back in 1982, but that came and went. By 1994 the World Bank had noticed that something big was happening. In a report entitled "Averting the Old Age Crisis", it argued that pension arrangements in most countries were unsustainable.

[B] For the next ten years a succession of books, mainly by Americans, sounded the alarm. They had titles like *Young vs Old*, *Gray Dawn* and *The Coming Generational Storm*, and their message was blunt: health-care systems were heading for the rocks, pensioners were taking young people to the cleaners, and soon there would be intergenerational warfare.

[C] Since then the debate has become less emotional, not least because a lot more is known about the subject. Books, conferences and research papers have multiplied. International organisations such as the OECD and the EU issue regular reports. Population ageing is on every agenda, from G8 economic conferences to NATO summits. The World Economic Forum plans to consider the future of pensions and health care at its prestigious Davos conference early next year. The media, including this newspaper, are giving the subject extensive coverage.

[D] Whether all that attention has translated into sufficient action is another question. Governments in rich countries now accept that their pension and health-care promises will soon become unaffordable, and many of them have embarked on reforms, but so far only timidly. That is not surprising: politicians with an eye on the next election will hardly rush to introduce unpopular measures that may not bear fruit for years, perhaps decades.

[E] The outline of the changes needed is clear. To avoid fiscal(□□□) meltdown, public pensions and health-care provision will have to be reined back severely and taxes may have to go up. By far the most effective method to restrain pension spending is to give people the opportunity to work longer, because it increases tax revenues and reduces spending on pensions at the same time. It may even keep them alive longer. John Rother, the AARP's head of policy and strategy, points to studies showing that other things being equal, people who remain at work have lower death rates than their retired peers.

[F] Younger people today mostly accept that they will have to work for longer and that their pensions will be less generous. Employers still need to be

persuaded that older workers are worth holding on to. That may be because they have had plenty of younger ones to choose from, partly thanks to the post-war baby-boom and partly because over the past few decades many more women have entered the labour force, increasing employers' choice. But the reservoir of women able and willing to take up paid work is running low, and the baby-boomers are going grey.

[G] In many countries immigrants have been filling such gaps in the labour force as have already emerged (and remember that the real shortage is still around ten years off). Immigration in the developed world is the highest it has ever been, and it is making a useful difference. In still-fertile America it currently accounts for about 40% of total population growth, and in fast-ageing western Europe for about 90%.

[H] On the face of it, it seems the perfect solution. Many developing countries have lots of young people in need of jobs; many rich countries need helping hands that will boost tax revenues and keep up economic growth. But over the next few decades labour forces in rich countries are set to shrink so much that inflows of immigrants would have to increase enormously to compensate: to at least twice their current size in western Europe's most youthful countries, and three times in the older ones. Japan would need a large multiple of the few immigrants it has at present. Public opinion polls show that people in most rich countries already think that immigration is too high. Further big increases would be politically unfeasible.

[I] To tackle the problem of ageing populations at its root, "old" countries would have to rejuvenate() themselves by having more of their own children. A number of them have tried, some more successfully than others. But it is not a simple matter of offering financial incentives or providing more child care. Modern urban life in rich countries is not well adapted to large families. Women find it hard to combine family and career. They often compromise by having just one child.

[J] And if fertility in ageing countries does not pick up? It will not be the end of the world, at least not for quite a while yet, but the world will slowly become a different place. Older societies may be less innovative and more strongly disinclined to take risks than younger ones. By 2025 at the latest, about half the voters in America and most of those in western European countries will be over 50 - and older people turn out to vote in much greater numbers than younger ones. Academic studies have found no evidence so far that older voters have used their power at the ballot box to push for policies that specifically benefit them, though if in future there are many more of them they might start doing so.

[K] Nor is there any sign of the intergenerational warfare predicted in the 1990s. After all, older people themselves mostly have families. In a recent study of parents and grown-up children in 11 European countries, Karsten Hank of Mannheim University found that 85% of them lived within 25km of each other and the majority of them were in touch at least once a week.

[L] Even so, the shift in the centre of gravity to older age groups is bound to have a profound effect on societies, not just economically and politically but in all sorts of other ways too. Richard Jackson and Neil Howe of America's CSIS, in a thoughtful book called *The Graying of the Great Powers*, argue that, among other things, the ageing of the developed countries will have a number of serious security implications.

[M] For example, the shortage of young adults is likely to make countries more reluctant to commit the few they have to military service. In the decades to 2050, America will find itself playing an ever-increasing role in the developed world's defence effort. Because America's population will still be growing when that of most other developed countries is shrinking, America will be the only developed country that still matters geopolitically(□□□□□).

Ask me in 2020

[N] There is little that can be done to stop population ageing, so the world will have to live with it. But some of the consequences can be alleviated. Many experts now believe that given the right policies, the effects, though grave, need not be catastrophic. Most countries have recognised the need to do something and are beginning to act.

[O] But even then there is no guarantee that their efforts will work. What is happening now is historically unprecedented. Ronald Lee, director of the Centre on the Economics and Demography of Ageing at the University of California, Berkeley, puts it briefly and clearly: "We don't really know what population ageing will be like, because nobody has done it yet."

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46. Employers should realise it is important to keep older workers in the workforce.

47. A recent study found that most old people in some European countries had regular weekly contact with their adult children.

48. Few governments in rich countries have launched bold reforms to tackle the problem of population ageing.

49. In a report published some 20 years ago, the sustainability of old-age pension systems in most countries was called into doubt.

50. Countries that have a shortage of young adults will be less willing to send them to war.

51. One-child families are more common in ageing societies due to the stress of urban life and the difficulties of balancing family and career.

52. A series of books, mostly authored by Americans, warned of conflicts between the older and younger generations.

53. Compared with younger ones, older societies tend to be less innovative and take fewer risks.

54. The best solution to the pension crisis is to postpone the retirement age.

55. Immigration as a means to boost the shrinking labour force may meet with resistance in some rich countries.

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2013 □ 12 □

□□□ The College Essay: Why Those 500 Words

Drive Us Crazy

The College Essay: Why Those 500 Words Drive Us Crazy

A) Meg is a lawyer-mom in suburban Washington, D.C., where lawyer-moms are thick on the ground. Her son Doug is one of several hundred thousand high-school seniors who had a painful fall. The deadline for applying to his favorite college was Nov. 1, and by early October he had yet to fill out the application. More to the point, he had yet to settle on a subject for the personal essay accompanying the application. According to college folklore, a well-turned essay has the power to seduce(□□) an admissions committee. "He wanted to do one thing at a time," Meg says, explaining her son's delay. "But really, my son is a huge procrastinator(□□□). The essay is the hardest thing to do, so he's put it off the longest." Friends and other veterans of the process have warned Meg that the back and forth between editing parent and writing student can be traumatic(□□□).

B) Back in the good old days - say, two years ago, when the last of my children suffered the ordeal(□□) - a high-school student applying to college could procrastinate all the way to New Year's Day of their senior year, assuming they could withstand the parental pestering(□□). But things change fast in the nail-biting world of college admissions. The recent trend toward early decision and early action among selective colleges and universities has pushed the traditional deadline of January up to Nov. 1 or early December for many students.

C) If the time for heel-dragging has been shortened, the true source of the anxiety and panic remains what it has always been. And it's not the application itself. A college application is a relatively straightforward questionnaire asking for the basics: name, address, family history, employment history. It would all be innocent enough-20 minutes of busy work-except it comes attached to a personal essay.

D) "There are good reasons it causes such anxiety," says Lisa Sohmer, director of college counseling at the Garden School in Jackson Heights, N.Y. "It's not just the actual writing. By now everything else is already set. Your

course load is set, your grades are set, your test scores are set. But the essay is something you can still control, and it's open-ended. So the temptation is to write and rewrite and rewrite." Or stall and stall and stall.

E) The application essay, along with its mythical importance, is a recent invention. In the 1930s, when only one in 10 Americans had a degree from a four-year college, an admissions committee was content to ask for a sample of applicants' school papers to assess their writing ability. By the 1950s, most schools required a brief personal statement of why the student had chosen to apply to one school over another.

F) Today nearly 70 percent of graduating seniors go off to college, including two-year and four-year institutions. Even apart from the increased competition, the kids enter a process that has been utterly transformed from the one baby boomers knew. Nearly all application materials are submitted online, and the Common Application provides a one-size-fits form accepted by more than 400 schools, including the nation's most selective.

G) Those schools usually require essays of their own, but the longest essay, 500 words maximum, is generally attached to the Common Application. Students choose one of six questions. Applicants are asked to describe an ethical dilemma they've faced and its impact on them, or discuss a public issue of special concern to them, or tell of a fictional character or creative work that has profoundly influenced them. Another question invites them to write about the importance (to them, again) of diversity—a word that has assumed magic power in American higher education. The most popular option: write on a topic of your choice.

H) "Boys in particular look at the other questions and say, 'Oh, that's too much work,'" says John Boshoven, a counselor in the Ann Arbor, Mich., public schools. "They think if they do a topic of their choice, 'I'll just go get that history paper I did last year on the Roman Empire and turn it into a first-person application essay!' And they end up producing something utterly ridiculous."

I) Talking to admissions professionals like Boshoven, you realize that the list of "don'ts" in essay writing is much longer than the "dos." "No book reports, no history papers, no character studies." says Sohmer.

J) "It drives you crazy, how easily kids slip into clichés(□□□□)," says Boshoven. "They don't realize how typical their experiences are. 'I scored the winning goal in soccer against our arch-rival.' 'My grandfather served in World War II, and I hope to be just like him someday.' That may mean a lot to that particular kid. But in the world of the application essay, it's nothing. You'll lose the reader in the first paragraph."

K) "The greatest strength you bring to this essay." says the College Board's how-to book, "is 17 years or so of familiarity with the topic: YOU. The form and style are very familiar, and best of all, you are the world-class expert on the subject of YOU... It has been the subject of your close scrutiny every morning since you were tall enough to see into the bathroom mirror." The key word in

the Common Application prompts is "you."

L) The college admission essay contains the grandest American themes-status anxiety, parental piety(□□) intellectual standards-and so it is only a matter of time before it becomes infected by the country's culture of excessive concern with self-esteem. Even if the question is ostensibly(□□□) about something outside the self (describe a fictional character or solve a problem of geopolitics), the essay invariably returns to the favorite topic: what is its impact on YOU?

M) "For all the anxiety the essay causes," says Bill McClintick of Mercersburg Academy in Pennsylvania, "it's a very small piece of the puzzle. I was in college admissions for 10 years. I saw kids and parents beat themselves up over this. And at the vast majority of places, it is simply not a big variable in the college's decision-making process."

N) Many admissions officers say they spend less than a couple of minutes on each application, including the essay. According to a recent survey of admissions officers, only one in four private colleges say the essay is of "considerable importance" in judging an application. Among public colleges and universities, the number drops to roughly one in 10. By contrast, 86 percent place "considerable importance" on an applicant's grades, 70 percent on "strength of curriculum."

O) Still, at the most selective schools, where thousands of candidates may submit identically high grades and test scores, a marginal item like the essay may serve as a tie-breaker between two equally qualified candidates. The thought is certainly enough to keep the pot boiling under parents like Meg, the lawyer-mom, as she tries to help her son choose an essay topic. For a moment the other day, she thought she might have hit on a good one. "His father's from France," she says. "I said maybe you could write about that, as something that makes you different. You know: half French, half American. I said, 'You could write about your identity issues. 'He said,' I don't have any identity issues!' And he's right. He's a well-adjusted, normal kid. But that doesn't make for a good essay, does it?"

46. Today many universities require their applicants to write an essay of up to five hundred words.

47. One recent change in college admissions is that selective colleges and universities have moved the traditional deadline to earlier dates.

48. Applicants and their parents are said to believe that the personal essay can sway the admissions committee.

49. Applicants are usually better off if they can write an essay that distinguishes them from the rest.

50. Not only is the competition getting more intense, the application process today is also totally different from what baby boomers knew.

51. In writing about their own experiences many applicants slip into cliches, thus failing to engage the reader.

52. According to a recent survey, most public colleges and universities

consider an applicant's grades highly important.

53. Although the application essay causes lots of anxiety, it does not play so important a role in the college's decision-making process.

54. The question you are supposed to write about may seem outside the self, but the theme of the essay should center around its impact on you.

55. In the old days, applicants only had to submit a sample of their school papers to show their writing ability.

□□□ The Uses of Difficulty

The Uses of Difficulty

The brain likes a challenge-and putting a few obstacles in its way may well boost its creativity.

A) Jack White, the former frontman of the White Stripes and an influential figure among fellow musicians, likes to make things difficult for himself. He uses cheap guitars that won't stay in shape or in tune. When performing, he positions his instruments in a way that is deliberately inconvenient, so that switching from guitar to organ mid-song involves a mad dash across the stage. Why? Because he's on the run from what he describes as a disease that preys on every artist: "ease of use". When making music gets too easy, says White, it becomes harder to make it sing.

B) It's an odd thought. Why would anyone make their work more difficult than it already is? Yet we know that difficulty can pay unexpected dividends. In 1966, soon after the Beatles had finished work on "Rubber Soul", Paul McCartney looked into the possibility of going to America to record their next album. The equipment in American studios was more advanced than anything in Britain, which had led the Beatles' great rivals, the Rolling Stones, to make their latest album, "Aftermath", in Los Angeles. McCartney found that EMI's(□□ □□) contractual clauses made it prohibitively expensive to follow suit, and the Beatles had to make do with the primitive technology of Abbey Road.

C) Lucky for us. Over the next two years they made their most groundbreaking work, turning the recording studio into a magical instrument of its own. Precisely because they were working with old-fashioned machines, George Martin and his team of engineers were forced to apply every ounce of their creativity to solve the problems posed to them by Lennon and McCartney. Songs like "Tomorrow Never Knows", "Strawberry Fields Forever", and "A Day in the Life" featured revolutionary sound effects that dazzled and mystified Martin's American counterparts.

D) Sometimes it's only when a difficulty is removed that we realise what it was doing for us. For more than two decades, starting in the 1960s, the poet Ted Hughes sat on the judging panel of an annual poetry competition for British

schoolchildren. During the 1980s he noticed an increasing number of long poems among the submissions, with some running to 70 or 80 pages. These poems were verbally inventive and fluent, but also "strangely boring". After making inquiries Hughes discovered that they were being composed on computers, then just finding their way into British homes.

E) You might have thought any tool which enables a writer to get words on to the page would be an advantage. But there may be a cost to such facility. In an interview with the Paris Review Hughes speculated that when a person puts pen to paper, "you meet the terrible resistance of what happened your first year at it, when you couldn't write at all". As the brain attempts to force the unsteady hand to do its bidding, the tension between the two results in a more compressed, psychologically denser expression. Remove that resistance and you are more likely to produce a 70-page ramble(□□□□□□□□).

F) Our brains respond better to difficulty than we imagine. In schools, teachers and pupils alike often assume that if a concept has been easy to learn, then the lesson has been successful. But numerous studies have now found that when classroom material is made harder to absorb, pupils retain more of it over the long term, and understand it on a deeper level.

G) As a poet, Ted Hughes had an acute sensitivity to the way in which constraints on self-expression, like the disciplines of metre and rhyme(□□), spur creative thought. What applies to poets and musicians also applies to our daily lives. We tend to equate(□□) happiness with freedom, but, as the psychotherapist and writer Adam Phillips has observed, without obstacles to our desires it's harder to know what we want, or where we're heading. He tells the story of a patient, a first-time mother who complained that her young son was always clinging to her, wrapping himself around her legs wherever she went. She never had a moment to herself, she said, because her son was "always in the way". When Phillips asked her where she would go if he wasn't in the way, she replied cheerfully, "Oh, I wouldn't know where I was!"

H) Take another common obstacle: lack of money. People often assume that more money will make them happier. But economists who study the relationship between money and happiness have consistently found that, above a certain income, the two do not reliably correlate. Despite the ease with which the rich can acquire almost anything they desire, they are just as likely to be unhappy as the middle classes. In this regard at least, F. Scott Fitzgerald was wrong.

I) Indeed, ease of acquisition is the problem. The novelist Edward St. Aubyn has a narrator remark of the very rich that, "not having to consider affordability, their desires rambled on like unstoppable bores, relentless(□□□□□□) and whimsical(□□□□□□) at the same time." When Boston College, a private research university, wanted a better feel for its potential donors, it asked the psychologist Robert Kenny to investigate the mindset of the super-rich. He surveyed 165 households, most of which had a net worth of \$ 25m or more. He found that many of his subjects were confused by the infinite options their

money presented them with. They found it hard to know what to want, creating a kind of existential bafflement. One of them put it like this: "You know, Bob, you can just buy so much stuff, and when you get to the point where you can just buy so much stuff, now what are you going to do?"

J) The internet makes information billionaires out of all of us, and the architects of our online experiences are catching on to the need to make things creatively difficult. Twitter's huge success is rooted in the simple but profound insight that in a medium with infinite space for self-expression, the most interesting thing we can do is restrict ourselves to 140 characters. The music service This Is My Jam helps people navigate the tens of millions of tracks now available instantly via Spotify and iTunes. Users pick their favourite song of the week to share with others. They only get to choose one. The service was only launched this year, but by the end of September 650 000 jams had been chosen. Its co-founder Matt Ogle explains its raison d'etre(□□□□ □) like this: "In an age of endless choice, we were missing a way to say, 'This. This is the one you should listen to'."

K) Today's world offers more opportunity than ever to follow the advice of the Walker Brothers and make it easy on ourselves. Compared with a hundred years ago, our lives are less tightly bound by social norms and physical constraints. Technology has cut out much of life's donkeywork, and we have more freedoms than ever: we can wear what we like and communicate with hundreds of friends at once at the click of a mouse. Obstacles are everywhere disappearing. Few of us wish to turn the clock back, but perhaps we need to remind ourselves how useful the right obstacles can be. Sometimes, the best route to fulfilment is the path of more resistance.

46. The rigorous requirements placed on the writing of poetry stimulate the poet's creativity.

47. With creativity, even old-fashioned instruments may produce spectacular sound effects.

48. More money does not necessarily bring greater happiness.

49. It is a false assumption that lessons should be made easier to learn.

50. Obstacles deliberately placed in the creation of music contribute to its success.

51. Those who enjoy total freedom may not find themselves happy.

52. Ted Hughes discovered many long poems submitted for poetry competition were composed on computers.

53. Maybe we need to bear in bear in mind that the right obstacles help lead us to greater achievements.

54. An investigation found that many of the super-rich were baffled by the infinite choices their money made available.

55. One free social networking website turned out to successful because it limited each posting to one hundred and forty characters.

□□□ Taste Not, Want Not

Taste Not, Want Not

Feeding the 9 Billion: The Tragedy of Waste

A) By 2075, the United Nations' mid-range projection for global population is about 9.5 billion. This means that there could be an extra three billion mouths to feed by the end of the century, a period in which substantial changes are anticipated in the wealth, calorie intake and dietary preferences of people in developing countries across the world. Such a projection presents mankind with wide-ranging social, economic, environmental and political issues that need to be addressed today to ensure a sustainable future for all. One key issue is how to produce more food in a world of finite resources.

B) Today, we produce about four billion metric tonnes of food per year. Yet due to poor practices in harvesting, storage and transportation, as well as market and consumer wastage, it is estimated that 30-50% of all food produced never reaches a human stomach. Furthermore, this figure does not reflect the fact that large amounts of land, energy, fertilisers and water have also been lost in the production of foodstuffs which simply end up as waste. This level of wastage is a tragedy that cannot continue if we are to succeed in the challenge of sustainably meeting our future food demands.

Where Food Waste Happens

C) In 2010, the Institution of Mechanical Engineers identified three principal emerging population groups across the world, based on characteristics associated with their current and projected stage of economic development.

- Fully developed, mature, post-industrial societies, such as those in Europe, characterised by stable or declining populations which are increasing in age.

- Late-stage developing nations that are currently industrialising rapidly, for example China, which will experience declining rates of population growth, coupled with increasing affluence(□□) and age profile.

- Newly developing countries that are beginning to industrialise, primarily in Africa, with high to very high population growth rates, and characterised by a predominantly young age profile.

D) Each group over the coming decades will need to address different issues surrounding food production, storage and transportation, as well as consumer expectations, if we are to continue to feed all our people.

E) In less-developed countries, such as those of sub-Saharan Africa and South-East Asia, wastage tends to occur primarily at the farmer-producer end of the supply chain. Inefficient harvesting, inadequate local transportation and poor infrastructure(□□□□) mean that produce is frequently handled inappropriately and stored under unsuitable farm site conditions.

F) In mature, fully developed countries such as the UK, more-efficient farming practices and better transport, storage and processing facilities ensure that a

larger proportion of the food produced reaches markets and consumers. However, characteristics associated with modern consumer culture mean produce is often wasted through retail and customer behaviour.

G) Major supermarkets, in meeting consumer expectations, will often reject entire crops of perfectly edible fruit and vegetables at the farm because they do not meet exacting marketing standards for their physical characteristics, such as size and appearance.

H) Of the produce that does appear in the supermarket, commonly used sales promotions frequently encourage customers to purchase excessive quantities which, in the case of perishable foodstuffs, inevitably generate wastage in the home. Overall between 30% and 50% of what has been bought in developed countries is thrown away by the purchaser.

Better Use of Our Finite Resources

I) Wasting food means losing not only life-supporting nutrition but also precious resources, including land, water and energy. As a global society, therefore, tackling food waste will help contribute towards addressing a number of key resource issues.

J) Land Usage: Over the last five decades, improved farming techniques and technologies have helped to significantly increase crop yields along with a 12% expansion of farmed land use. However, a further increase in farming area without impacting unfavourably on what remains of the world's natural ecosystems appears unlikely. The challenge is that an increase in animal-based production will require more land and resources, as livestock() farming demands extensive land use.

K) Water Usage: Over the past century, human use of fresh water has increased at more than double the rate of population growth. Currently about 3.8 trillion m³ of water is used by humans per year. About 70% of this is consumed by the global agriculture sector, and the level of use will continue to rise over the coming decades.

L) Better irrigation can dramatically improve crop yield and about 40% of the world's food supply is currently derived from irrigated land. However, water used in irrigation is often sourced unsustainably. In processing foods after the agricultural stage, there are large additional uses of water that need to be tackled in a world of growing demand. This is particularly crucial in the case of meat production, where beef uses about 50 times more water than vegetables. In the future, more effective washing techniques, management procedures, and recycling and purification of water will be needed to reduce wastage.

M) Energy Usage: Energy is an essential resource across the entire food production cycle, with estimates showing an average of 7-10 calories of input being required in the production of one calorie of food. This varies dramatically depending on crop, from three calories for plant crops to 35 calories in the production of beef. Since much of this energy comes from the utilisation of fossil fuels, wastage of food potentially contributes to

unnecessary global warming as well as inefficient resource utilisation.

N) In the modern industrialised agricultural process - which developing nations are moving towards in order to increase future yields-energy usage in the making and application of fertilisers and pesticides represents the single biggest component. Wheat production takes 50% of its energy input for these two items alone. Indeed, on a global scale, fertiliser manufacturing consumes about 3-5% of the world's annual natural gas supply. With production anticipated to increase by 25% between now and 2030, sustainable energy sourcing will become an increasingly major issue. Energy to power machinery, both on the farm and in the storage and processing facilities, adds to the energy total, which currently represents about 3.1% of annual global energy consumption.

Recommendations

O) Rising population combined with improved nutrition standards and shifting dietary preferences will exert pressure for increases in global food supply. Engineers, scientists and agriculturalists have the knowledge, tools and systems that will assist in achieving productivity increases. However, pressure will grow on finite resources of land, energy and water. The potential to provide 60-100% more food by simply eliminating losses, while simultaneously freeing up land, energy and water resources for other uses, is an opportunity that should not be ignored. In order to begin tackling the challenge, the Institution recommends that:

- The UN Food and Agriculture Organisation work with the international engineering community to ensure governments of developed nations put in place programmes that transfer engineering knowledge, design know-how, and suitable technology to newly developing countries. This will help improve produce handling in the harvest, and immediate post-harvest stages of food production.

- Governments of rapidly developing countries incorporate waste minimisation thinking into the transport infrastructure and storage facilities currently being planned, engineered and built.

- Governments in developed nations devise and implement policy that changes consumer expectations. These should discourage retailers from wasteful practices that lead to the rejection of food on the basis of cosmetic characteristics, and losses in the home due to excessive purchasing by consumers.

46. Elimination of waste alone can potentially provide over sixty percent more food for the growing world population.

47. The production and application of fertilisers and pesticides account for the largest part of energy use in the modern industrialised agricultural process.

48. Consumers in developed countries throw away nearly half of their food purchases because they tend to buy in excessive quantities.

49. It is recommended that engineering knowledge and suitable technology in developed countries be introduced to developing countries to improve

produce handling in the harvest.

50. The predicted global population growth means that ways have to be found to produce more food with finite resources.

51. A further expansion of farming area will adversely impact on the world's natural ecosystems.

52. Perfectly eatable fruit and vegetable crops often fail to reach supermarkets due to their size or physical appearance.

53. Poor practices in harvesting, storage and transportation have resulted in a waste of much of the food we produce and thus a waste of land and resources.

54. Food waste in less-developed countries happens mainly at the producers' end.

55. Beef consumes far more water to produce than vegetables.

2014 □ 6 □

□□□ Lessons from a Feminist Paradise

Lessons from a Feminist Paradise

A) On the surface, Sweden appears to be a feminist, paradise. Look at any global survey of gender equality and Sweden will be near the top. Family-friendly policies are its norm - with 16 months of paid parental leave, special protections for part-time workers, and state-subsidized preschools where, according to a government website, "gender-awareness education is increasingly common." Due to an unofficial quota system, women hold 45 percent of positions in the Swedish parliament. They have enjoyed the protection of government agencies with titles like the Ministry of Integration and Gender Equality and the Secretariat of Gender Research. So why are American women so far ahead of their Swedish counterparts in breaking through the glass ceiling?

B) In a 2012 report, the World Economic Forum found that when it comes to closing the gender gap in "economic participation and opportunity," the United States is ahead of not only Sweden but also Finland, Denmark, the Netherlands, Iceland, Germany, and the United Kingdom. Sweden's rank in the report can largely be explained by its political quota system. Though the United States has fewer women in the workforce (68 percent compared to Sweden's 77 percent), American women who choose to be employed are far more likely to work full-time and to hold high-level jobs as managers or professionals. They also own more businesses, launch more start-ups(□□□□□□), and more often work in traditionally male fields. As for breaking through the glass ceiling in business, American women are well in the lead.

C) What explains the American advantage? How can it be that societies like Sweden, where gender equality is vigorously pursued and enforced, have fewer female managers, executives, professionals, and business owners than the laissez-faire(□□□□□) United States? A new study by Cornell economists Francine Blau and Lawrence Kahn gives an explanation.

D) Generous parental leave policies and readily available part-time options have unintended consequences: instead of strengthening women's attachment to the workplace, they appear to weaken it. In addition to a 16-month leave, a Swedish parent has the right to work six hours a day (for a reduced salary) until his or her child is eight years old. Mothers are far more

likely than fathers to take advantage of this law. But extended leaves and part-time employment are known to be harmful to careers-for both genders. And with women a second factor comes into play, most seem to enjoy the flexible-time arrangement (once known as the "mommy track") and never find their way back to full-time or high-level employment. In sum: generous family-friendly policies do keep more women in the labor market, but they also tend to diminish their careers.

E) According to Blau and Kahn, Swedish-style paternal(istic) leave policies and flexible-time arrangements pose a second threat to women's progress: they make employers cautious about hiring women for full-time positions at all. Offering a job to a man is the safer bet. He is far less likely to take a year of parental leave and then return on a reduced work schedule for the next eight years.

F) I became aware of the trials of career-focused European women a few years ago when I met a post-doctoral student from Germany who was then a visiting fellow at Johns Hopkins. She was astonished by the professional possibilities afforded to young American women. Her best hope in Germany was a government job-prospects for women in the private sector were dim. "In Germany," she told me, "we have all the benefits, but employers don't want to hire us."

G) Swedish economists Magnus Henrekson and Mikael Stenkula addressed the following question in their 2009 study: why are there so few female top executives in the European egalitarian(welfare) states? Their answer; "Broad-based welfare-state policies hinder women's representation in elite competitive positions."

H) It is tempting to declare the Swedish policies regressive(ive) and hail the American system as superior. But that would be shortsighted. The Swedes can certainly take a lesson from the United States and look for ways to clear a path for their ambitious female careerists. But most women are not committed careerists. When the Pew Research Center recently asked American parents to identify their "ideal" life arrangement, 47 percent of mothers said they would prefer to work part-time and 20 percent said they would prefer not to work at all. Fathers answered differently: 75 percent preferred full-time work. Some version of the Swedish system might work well for a majority of American parents, but the United States is unlikely to fully embrace the Swedish model. Still, we can learn from their experience.

I) Despite its failure to shatter the glass ceiling, Sweden has one of the most powerful and innovative economies in the world. In its 2011-2012 survey, the World Economic Forum ranked Sweden as the world's third most competitive economy; the United States came in fifth. Sweden, dubbed the "rockstar of the recovery" in the Washington Post, also leads the world in life satisfaction and happiness. It is a society well worth studying, and its efforts to conquer the gender gap impart a vital lesson - though not the lesson the Swedes had in mind.

J) Sweden has gone farther than any other nation on earth to integrate the sexes and to offer women the same opportunities and freedoms as men. For decades, these descendants of the Vikings have been trying to show the world that the right mix of enlightened policy, consciousness raising, and non-sexist child rearing would close the gender divide once and for all. Yet the divide persists.

K) A 2012 press release from Statistics Sweden bears the title "Gender Equality in Sweden Treading(□) Water" and notes:

The total income from employment for all ages is lower for women than for men.

One in three employed women and one in ten employed men work part-time. Women's working time is influenced by the number and age of their children, but men's working time is not affected by these factors.

Of all employees, only 13 percent of the women and 12 percent of the men have occupations with an even distribution of the sexes.

L) Confronted with such facts, some Swedish activists and legislators are demanding more extreme and far-reaching measures, such as replacing male and female pronouns with a neutral alternative and monitoring children more closely to correct them when they gravitate(□□□) toward gendered play. When it came to light last year that mothers, far more than fathers, chose to stay home from work to care for their sick kids, Ulf Kristersson, minister of social security, quickly commissioned a study to determine the causes of and possible cures for this disturbing state of affairs.

M) Swedish family policies, by accommodating women's preferences effectively, are reducing the number of women in elite competitive positions. The Swedes will find this paradoxical and try to find solutions. Let us hope these do not include banning gender pronouns, policing children's play, implementing more gender quotas, or treating women's special attachment to home and family as a social injustice. Most mothers do not aspire to(□□) elite, competitive full-time positions: the Swedish policies have given them the freedom and opportunity to live the lives they prefer. Americans should look past the gender rhetoric and consider what these Scandinavians have achieved. On their way to creating a feminist paradise, the Swedes have unintentionally created a haven(□□□) for normal mortals.

46. Sweden has done more than other nations to close the gender gap, but it continues to exist.

47. Sweden is one of the most competitive economies in the world and its people enjoy the greatest life satisfaction.

48. More American women hold elite job positions in business than Swedish women.

49. Swedish family-friendly policies tend to exert a negative influence on women's careers.

50. The quota system in Sweden ensures women's better representation in government.

- 51. Though the Swedish model appears workable for most American parents, it may not be accepted by them in its entirety.
- 52. Swedish women are allowed the freedom and opportunity to choose their own way of life.
- 53. Swedish employers are hesitant about hiring women for full-time positions because of the family-friendly policies.
- 54. Gender-awareness education is becoming more and more popular in state-subsidized preschools in Sweden.
- 55. Some lawmakers in Sweden propose that genderless pronouns be used in the Swedish language.

□□□ The Street-Level Solution

The Street-Level Solution

A) When I was growing up, one of my father's favorite sayings (borrowed from the humorist Will Rogers) was: "It isn't what we don't know that causes the trouble: it's what we think we know that just ain't so." One of the main insights to be taken from the 100,000 Homes Campaign and its strategy to end chronic homelessness is that, until recently, our society thought it understood the nature of homelessness, but it didn't.

B) That led to a series of mistaken assumptions about why people become homeless and what they need. Many of the errors in our homelessness policies have stemmed from the conception that, the homeless are a homogeneous group. It's only in the past 15 years that organizations like Common Ground, and others, have taken a street-level view of the problem - distinguishing the "episodically homeless" from the "chronically homeless" in order to understand their needs at an individual level. This is why we can now envisage a different approach - and get better results.

C) Most readers expressed support for the effort, although a number were skeptical, and a few utterly dismissive, about the chances of long-term homeless people adapting well to housing. This is to be expected; it's hard to imagine what we haven't yet seen. As Niccolo Machiavelli wrote in *The Prince*, one of the major obstacles in any effort to advance systemic change is the "incredulity of men," which is to say that people "do not readily believe in new things until they have had a long experience of them," Most of us have witnessed homeless people on the streets for decades. Few have seen formerly homeless people after they have been housed successfully. We don't have reference points for that story. So we generalize from what we know - or think we know.

D) But that can be misleading, even to experts. When I asked Rosanne Haggerty, founder of Common Ground, which currently operates 2,310 units

of supportive housing (with 552 more under construction), what had been her biggest surprise in this work, she replied: "Fifteen years ago, I would not have believed that people who had been so broken and stuck in homelessness could thrive to the degree that they do in our buildings." And Becky Kanis, the campaign's director, commented: "There is this sense in our minds that someone who's on the streets is almost in their DNA different from someone who has a house. The campaign is creating a first-hand experience for many people that, that is really not the case."

E) One of the startling realizations that I had while researching this column is that anybody could become like a homeless person - all it takes is a traumatic(□□□) brain injury. A bicycle fall, a car accident, a slip on the ice, or if you're a soldier, a head wound - and your life could become unrecognizable. James O'Connell, a doctor who has been treating the most vulnerable homeless people on the streets of Boston for 25 years, estimates that 40 percent of the long-term homeless people he's met had such a brain injury. "For many it was a head injury prior to the time they became homeless," he said. "They became unpredictable. They'd have mood swings, fits of explosive behavior. They couldn't hold onto their jobs. Drinking made them feel better. They'd end up on the streets."

F) Once homeless people return to housing, they're in a much better position to rebuild their lives. But it's important to note that housing alone is not enough. As with many complex social problems, when you get through the initial crisis, you have another problem to solve which is no less challenging. But it is a better problem.

G) Over the past decade, O'Connell has seen this happen. "I spend half my time on the streets or in the hospital and the other half making house calls to people who lived for years on the streets," he said. "So from a doctor's point, of view it's a delightful switch, but it's not as if putting someone in housing is the answer to addressing all of their problems. It's the first step."

H) Once in housing, formerly homeless people can become isolated and lonely. If they've lived on the streets for years, they may have acquired a certain standing as well as a sense of pride in their survival skills. Now indoors, those aspects of their identity may be stripped away. Many also experience a profound disorientation at the outset. "If you're homeless for more than six months, you kind of lose your bearings," says Haggerty. "Existence becomes not about overcoming homelessness but about finding food, begging, looking for a job to survive another day. The whole process of how you define stability gets reordered."

I) Many need regular, if not continuous, support with mental health problems, addictions and illnesses - and, equally important, assistance in the day-to-day challenges of life, reacquainting with family, building relationships with neighbors, finding enjoyable activities or work, managing finances, and learning how to eat healthy food.

J) For some people, the best solution is to live in a communal(□□) residence,

with special services. This isn't available everywhere, however, hi Boston, for example, homeless people tend to be scattered in apartments throughout the city.

K) Common Ground's large residences in New York offer insight into the possibilities for change when homeless people have a rich array of supports. In addition to more traditional social services, residents also make use of communal gardens, classes in things like cooking, yoga, theatre and photography, and job placement. Last year, 188 formerly homeless tenants in four of Common Ground's residences, found jobs.

L) Because the properties have many services and are well-managed, Haggerty has found posthousing problems to be surprisingly rare. In the past 10 years, there have been only a handful of incidents of quarrels between tenants. There is very little graffiti(□□) or vandalism(□□). And the turnover is almost negligible. In the Prince George Hotel in New York, which is home to 208 formerly homeless people and 208 low-income tenants, the average length of tenancy is close to seven years. (All residents pay 30 percent of their income for rent; for the formerly homeless, Lids comes out of their government benefits.) When people move on, it is usually because they've found a preferable apartment.

M) "Tenants also want to participate in shaping the public areas of the buildings, said Haggerty." They formed a gardening committee. They want a terrace on the roof. Those are things I didn't count on." The most common tenant demand? "People always want more storage space - but that's true of every New Yorker," she adds. "In many ways, we're a lot like a normal apartment building. Our tenants look like anyone else."

N) As I mentioned, homelessness is a catch - all for a variety of problems. A number of readers asked whether the campaign will address family homelessness, which has different causes and requires a different solution. I've been following some of the promising ideas emerging to address and prevent family homelessness. Later in 2011, I'll explore these ideas in a column. For now, I'll conclude with an update on the 100,000 Homes Campaign. Since Tuesday, New Orleans and a few other communities have reported new results. The current count of people housed is 7,043.

46. Tenants in Common Ground's residences all want more room for storage.

47. Homes Campaign provides first-hand proof that the homeless are not what they were once believed to be.

48. Common Ground's residences are well-managed and by and large peaceful.

49. Housing the homeless is only the first step to solving all their problems.

50. A large percent of the chronically homeless have suffered from brain injury.

51. After being housed many homeless people become confused at first as to how to deal with life off the street.

52. Some people think the best way to help the homeless is to provide them

with communal housing.

53. The homeless with health problems should be given regular support in their daily lives.

54. Until recently American society has failed to see what homelessness is all about.

55. Many formerly homeless tenants in New York's Common Ground's residences got hired.

□□□ What If Middle-Class Jobs Disappear?

What If Middle-Class Jobs Disappear?

A) The most recent recession in the United States began in December 2007 and ended in June 2009, according to the National Bureau of Economic Research. However, two years after the official end of the recession, few Americans would say that economic troubles are behind us. The unemployment rate, in particular, remains above 9%. Some labor market indicators, such as the proportion of long-term unemployed, are worse now than for any postwar recession.

B) There are two widely circulated narratives to explain what's going on. The Keynesian narrative is that there has been a major drop in aggregate demand. According to this narrative, the slump can be largely cured by using monetary and fiscal(□□□) stimulus. The main anti-Keynesian narrative is that businesses are suffering from uncertainty and over-regulation. According to this narrative, the slump can be cured by having the government commit to and follow a more hands-off approach.

C) I want to suggest a third interpretation. Without ruling out a role for aggregate demand or for the regulatory environment, I wish to suggest that structural change is an important factor in the current rate of high unemployment. The economy is in a state of transition, in which the middle-class jobs that emerged after World War II have begun to decline. As Erik Brynjolfsson and Andrew McAfee put it in a recent e-book *Race Against the Machine*: "The root of our problems is not that we're in a great recession, or a great stagnation(□□), but rather that we are in the early throes(□□) of a great restructuring."

D) In fact, I believe the Great Depression of the 1930s can also be interpreted in part as an economic transition. The impact of the internal combustion engine(□□□) and the small electric motor on farming and manufacturing reduced the value of uneducated laborers. Instead, by the 1950s, a middle class of largely clerical(□□□□□□) workers was the most significant, part, of the labor force. Between 1930 and 1950, the United States economy underwent a great transition. Demand fell for human effort such as lifting, squeezing, and

hammering. Demand increased for workers who could read and follow directions. The evolutionary process eventually changed us from a nation of laborers to a nation of clerks.

E) The proportion of employment classified as "clerical workers" grew from 5.2% in 1910 to a peak of 19.3% in 1980. (However, by 2000 this proportion had edged down to 17.4%.) Overall, workers classified as clerical workers, technical workers, managers and officials exceeded 50% of the labor force by 2000. Corresponding declines took place in the manual occupations. Workers classified as laborers, other than farm hands or miners, peaked at 11.4% of the labor force in 1920 but were barely 6% by 1950 and less than 4% by 2000. Farmers and farm laborers fell from 33% of the labor force in 1910 to less than 15% by 1950 and only 1.2% in 2000.

F) The introduction of the tractor and improvements in the factory rapidly reduced the demand for uneducated workers. By the 1930s, a marginal farm hand could not produce enough to justify his employment. Sharecropping, never much better than a subsistence occupation, was no longer viable(□□□). Meanwhile, machines were replacing manufacturing occupations like cigar rolling and glass blowing for light bulbs.

G) The structural-transition interpretation of the unemployment problem of the 1930s would be that the demand for uneducated workers in the United States had fallen, but the supply remained high. The high school graduation rate was only 8.8% in 1912 and still just 29% in 1931. By 1950, it had reached 59%. With a new generation of workers who had completed high school, the mismatch between skills and jobs had been greatly reduced.

H) What took place after World War II was not the revival of a 1920s economy, with its small farming units, urban manufacturing, and plurality of laborers. Instead, the 1950s saw the creation of a new suburban economy, with a plurality of white-collar workers. With an expanded transportation and communications infrastructure(□ □ □ □), businesses needed telephone operators, shipping clerks and similar occupations. If you could read, follow simple instructions, and settle into a routine, you could find a job in the post-war economy.

I) The trend away from manual labor has continued. Even within the manufacturing sector, the share of production and non-supervisory workers in manufacturing employment went from over 85% just after World War II to less than 70% in more recent, years. To put this another way, the proportion of white-collar work in manufacturing has doubled over the past 50 years. On the factory floor itself, work has become less physically demanding. Instead, it requires more cognitive skills and the ability to understand and carry out well-defined procedures.

J) As noted earlier, the proportion of clerical workers in the economy peaked in 1980. By that date, computers and advanced communications equipment had already begun to affect telephone operations and banking. The rise of the personal computer and the Internet has widened the impact of these

technologies to include nearly every business and industry.

K) The economy today differs from that of a generation ago. Mortgage and consumer loan underwriters() have been replaced by credit scoring. Record stores have been replaced by music downloads. Book stores are closing, while sales of books on electronic readers have increased. Data entry has been moved off shore. Routine customer support also has been outsourced() overseas.

L) These trends serve to limit the availability of well-defined jobs. If a job can be characterized by a precise set of instructions, then that job is a candidate to be automated or outsourced to modestly educated workers in developing countries. The result is what David Autor calls the polarization of the American job market.

M) Using the latest Census Bureau data, Matthew Slaughter found that from 2000 to 2010 the real earnings of college graduates (with no advanced degree) fell by more in percentage terms than the earnings of high school graduates. In fact, over this period the only education category to show an increase in earnings was those with advanced degrees.

N) The outlook for mid-skill jobs would not appear to be bright. Communications technology and computer intelligence continue to improve, putting more occupations at risk. For example, many people earn a living as drivers, including trucks and taxicabs. However, the age of driverless vehicles appears to be moving closer. Another example is in the field of education. In the fall of 2011, an experiment with an online course in artificial intelligence conducted by two Stanford professors drew tens of thousands of registrants(). This increases the student-teacher ratio by a factor of close to a thousand. Imagine the number of teaching jobs that might be eliminated if this could be done for math, economics, chemistry, and so on.

O) It's important to bear in mind that when we offer a structural interpretation of unemployment, a "loss of jobs" means an increase in productivity. Traditionally, economists have argued that productivity increases are a good thing, even though they may cause unemployment for some workers in the short run. In the long run, the economy does not run out of jobs. Rather, new jobs emerge as old jobs disappear. The story we tell is that average well-being rises, and the more people are able to adapt, the more widespread the improvement becomes.

46. Even factory floor work today has become intellectually challenging rather than physically demanding.

47. Increases in productivity prove beneficial though some people may lose their jobs temporarily.

48. The unemployment rate remained high even two years after the government declared the recent recession was over.

49. The author suggests that the recent high unemployment rate is mainly caused by a decrease of middle-class jobs.

50. The creation of a suburban economy in the 1950s created lots of office

jobs.

51. In the first decade of the 21st century, only people with postgraduate degrees experienced an increase in earnings.

52. One economics theory suggests using monetary and fiscal stimulus to cope with an economic recession.

53. The popularity of online courses may eliminate many teaching jobs.

54. Computer technology has brought about revolutionary changes in the record and book business.

55. White-collar workers accounted for more than half of the labor force by the end of the 20th century.

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□□□ Meaning Is Healthier Than Happiness

Meaning Is Healthier Than Happiness

[A] For at least the last decade, the happiness craze has been building. In the last three months alone, over 1,000 books on happiness were released on Amazon, including Happy Money, Happy-People-Pills for All, and, for those just starting out, Happiness for Beginners.

[B] One of the consistent claims of books like these is that happiness is associated with all sorts of good life outcomes, including - most promisingly - good health. Many studies have noted the connection between a happy mind and a healthy body - the happier you are, the better health outcomes we seem to have. In an overview of 150 studies on this topic, researchers put it like this: "Inductions of well-being lead to healthy functioning, and inductions of ill-being lead to compromised health."

[C] But a new study, just published in the Proceedings of the National Academy of Sciences (PNAS) challenges the rosy picture. Happiness may not be as good for the body as researchers thought. It might even be bad.

[D] Of course, it's important to first define happiness. A few months ago, I wrote a piece called "There's More to Life Than Being Happy" about a psychology study that dug into what happiness really means to people. It specifically explored the difference between a meaningful life and a happy life.

[E] It seems strange that there would be a difference at all. But the researchers, who looked at a large sample of people over a month-long period, found that happiness is associated with selfish "taking" behavior and that having a sense of meaning in life is associated with selfless "giving" behavior.

[F] "Happiness without meaning characterizes a relatively shallow, self-absorbed or even selfish life, in which things go well, needs and desire are easily satisfied, and complicated relationships are avoided," the authors of the study wrote. "If anything, pure happiness is linked to not helping others in need." While being happy is about feeling good, meaning is derived from contributing to others or to society in a bigger way. As Roy Baumeister, one of the researchers, told me, "Partly what we do as human beings is to take care of others and contribute to others. This makes life meaningful but it does not

necessarily make us happy."

[G] The new PNAS study also sheds light on the difference between meaning and happiness, but on the biological level. Barbara Fredrickson, a psychological researcher at the University of North Carolina - Chapel Hill, and Steve Cole, a genetics and psychiatry (MD) researcher at UCLA, examined the self-reported levels of happiness and meaning in 80 research subjects.

[H] Happiness was defined, as in the earlier study, by feeling good. The researchers measured happiness by asking subjects questions like "How often did you feel happy?", "How often did you feel interested in life?" and "How often did you feel satisfied?" The more strongly people endorsed these measures of "hedonic (hedonic) well-being," or pleasure, the higher they scored on happiness.

[I] Meaning was defined as an orientation to something bigger than the self. They measured meaning by asking questions like "How often did you feel that your life has a sense of direction or meaning to it?", "How often did you feel that you had something to contribute to society?" The more people endorsed these measures of "eudaimonic (eudaimonic) well-being" - or, simply put, virtue - the more meaning they felt in life.

[J] After noting the sense of meaning and happiness that each subject had, Fredrickson and Cole, with their research colleagues, looked at the ways certain genes expressed themselves in each of the participants. Like neuroscientists who use fMRI (functional magnetic resonance imaging) scanning to determine how regions in the brain respond to different stimuli, Cole and Fredrickson are interested in how the body, at the genetic level, responds to feelings of happiness and meaning.

[K] Cole's past work has linked various kinds of chronic adversity to a particular gene expression pattern. When people feel lonely, are grieving the loss of a loved one, or are struggling to make ends meet, their bodies go into threat mode. This triggers the activation of a stress-related gene pattern that has two features: an increase in the activity of pro-inflammatory (pro-inflammatory) genes and a decrease in the activity of genes involved in anti-viral responses.

[L] Cole and Fredrickson found that people who are happy but have little to no sense of meaning in their lives have the same gene expression patterns as people who are responding to and enduring chronic adversity. That is, the bodies of these happy people are preparing them for bacterial threats by activating the pro-inflammatory response. Chronic inflammation is, of course, associated with major illnesses like heart disease and various cancers.

[M] "Empty positive emotions" - like the kind people experience during manic (manic) episodes or artificially induced euphoria (euphoria) from alcohol and drugs - "are about as good for you for as adversity," says Fredrickson.

[N] It's important to understand that for many people, a sense of meaning and happiness in life overlap; many people score jointly high (or jointly low) on the happiness and meaning measures in the study. But for many others, there is a dissonance (dissonance) - they feel that they are low on happiness and high on

meaning or that their lives are very high in happiness, but low in meaning. This last group, which has the gene expression pattern associated with adversity, formed a 75 percent of study participants. Only one quarter of the study participants had what the researchers call "eudaimonic predominance" - that is, their sense of meaning outpaced their feelings of happiness.

[O] This is too bad given the more beneficial gene expression pattern associated with meaningfulness. People whose levels of happiness and meaning line up, and people who have a strong sense of meaning but are not necessarily happy, showed a deactivation of the adversity stress response. Their bodies were not preparing them for the bacterial infections that we get when we are alone or in trouble, but for the viral infections we get when surrounded by a lot of other people.

[P] Fredrickson's past research, described in her two books, *Positivity* and *Love 2.0*, has mapped the benefits of positive emotions in individuals. She has found that positive emotions broaden a person's perspective and help protect people against adversity. So it was surprising to her that hedonic well-being, which is associated with positive emotions and pleasure, did so badly in this study compared with eudaimonic well-being.

[Q] "It's not the amount of hedonic happiness that's a problem," Fredrickson tells me, "It's that it's not matched by eudaimonic well-being. It's great when both are in step. But if you have more hedonic well-being than would be expected, that's when this [gene] pattern that's similar to adversity emerged."

[R] The terms hedonism and eudaimonism bring to mind the great philosophical debate, which has shaped Western civilization for over 2,000 years, about the nature of the good life. Does happiness lie in feeling good, as hedonists think, or in doing and being good, as Aristotle and his intellectual descendants, the virtue ethicists(德性伦理学), think? From the evidence of this study, it seems that feeling good is not enough. People need meaning to thrive. In the words of Carl Jung, "The least of things with a meaning is worth more in life than the greatest of things without it." Jung's wisdom certainly seems to apply to our bodies, if not also to our hearts and our minds.

46. The author's recent article examined how a meaningful life is different from a happy life.

47. It should be noted that many people feel their life is both happy and meaningful.

48. According to one survey, there is a close relationship between hedonic well-being measures and high scores on happiness.

49. According to one of the authors of a new study, what makes life meaningful may not make people happy.

50. Experiments were carried out to determine our body's genetic expression of feelings of happiness and meaning.

51. A new study claims happiness may not contribute to health.

52. According to the researchers, taking makes for happiness while giving adds meaning to life.

53. Evidence from research shows that it takes meaning for people to thrive.
54. With regard to gene expression patterns, happy people with little or no sense of meaning in life are found to be similar to those suffering from chronic adversity.
55. Most books on happiness today assert that happiness is beneficial to health.

□ □ □ **High School Sports Aren't Killing**

Academics

High School Sports Aren't Killing Academics

A) In this month's Atlantic cover article, "The Case Against High-School Sports," Amanda Ripley argues that school-sponsored sports programs should be seriously cut. She writes that, unlike most countries that outperform the United States on international assessments, American schools put too much of an emphasis on athletics. "Sports are embedded in American schools in a way they are not almost anywhere else," she writes. "Yet this difference hardly ever comes up in domestic debates about America's international mediocrity(□□) in education."

B) American student-athletes reap many benefits from participating in sports, but the costs to the schools could outweigh their benefits, she argues. In particular, Ripley contends that sports crowd out the academic missions of schools: America should learn from South Korea and Finland and every other country at the top level of international test scores, all of whom emphasize athletics far less in school. "Even in eighth grade, American kids spend more than twice the time Korean kids spend playing sports," she writes, citing a 2010 study published in the Journal of Advanced Academics.

C) It might well be true that sports are far more rooted in American high schools than in other countries. But our reading of international test scores finds no support for the argument against school athletics. Indeed, our own research and that of others lead us to make the opposite case. School-sponsored sports appear to provide benefits that seem to increase, not detract(□□) from, academic success.

D) Ripley indulges a popular obsession(□ □) with international test score comparisons, which show wide and frightening gaps between the United States and other countries. She ignores, however, the fact that states vary at least as much in test scores as do developed countries. A 2011 report from Harvard University shows that Massachusetts produces math scores comparable to South Korea and Finland, while Mississippi scores are closer to

Trinidad and Tobago. Ripley's thesis about sports falls apart in light of this fact. Schools in Massachusetts provide sports programs while schools in Finland do not. Schools in Mississippi may love football while in Tobago interscholastic sports are nowhere near as prominent. Sports cannot explain these similarities in performance. They can't explain international differences either.

E) If it is true that sports undermine the academic mission of American schools, we would expect to see a negative relationship between the commitment to athletics and academic achievement. However, the University of Arkansas's Daniel Bowen and Jay Greene actually find the opposite. They examine this relationship by analyzing schools' sports winning percentages as well as student-athletic participation rates compared to graduation rates and standardized test score achievement over a five-year period for all public high schools in Ohio. Controlling for student poverty levels, demographics(□□□□□□), and district financial resources, both measures of a school's commitment to athletics are significantly, positively related to lower dropout rates as well as higher test scores.

F) On-the-field success and high participation in sports is not random - it requires focus and dedication to athletics. One might think this would lead schools obsessed with winning to deemphasize academics. Bowen and Greene's results contradict that argument. A likely explanation for this seemingly counterintuitive(□□□□□□) result is that success in sports programs actually facilitates or reflects greater social capital within a school's community.

G) Ripley cites the writings of renowned sociologist James Coleman, whose research in education was groundbreaking. Coleman in his early work held athletics in contempt, arguing that they crowded out schools' academic missions. Ripley quotes his 1961 study, *The Adolescent Society*, where Coleman writes, "Altogether, the trophy(□□) case would suggest to the innocent visitor that he was entering an athletic club, not an educational institution."

H) However, in later research he would show how the success of schools is highly dependent on what he termed social capital, "the norms, the social networks, and the relationships between adults and children that are of value for the child's growing up."

I) According to a 2013 evaluation conducted by the Crime Lab at the University of Chicago, a program called *Becoming a Man - Sports Edition* creates lasting improvements in the boys' study habits and grade point averages. During the first year of the program, students were found to be less likely to transfer schools or be engaged in violent crime. A year after the program, participants were less likely to have had an encounter with the juvenile justice system.

J) If school-sponsored sports were completely eliminated tomorrow, many American students would still have opportunities to participate in organized athletics elsewhere, much like they do in countries such as Finland, Germany,

and South Korea. The same is not certain when it comes to students from more disadvantaged backgrounds. In an overview of the research on non-school based after-school programs, researchers find that disadvantaged children participate in these programs at significantly lower rates. They find that low-income students have less access due to challenges with regard to transportation, non-nominal fees, and off-campus safety. Therefore, reducing or eliminating these opportunities would most likely deprive disadvantaged students of the benefits from athletic participation, not least of which is the opportunity to interact with positive role models outside of regular school hours.

K) Another unfounded criticism that Ripley makes is bringing up the stereotype that athletic coaches are typically lousy(□□□) classroom teachers. "American principals, unlike the vast majority of principals around the world, make many hiring decisions with their sports teams in mind, which does not always end well for students," she writes. Educators who seek employment at schools primarily for the purpose of coaching are likely to shirk(□□) teaching responsibilities, the argument goes. Moreover, even in the cases where the employee is a teacher first and athletic coach second, the additional responsibilities that come with coaching likely come at the expense of time otherwise spent on planning, grading, and communicating with parents and guardians.

L) The data, however, do not seem to confirm this stereotype. In the most rigorous study on the classroom results of high school coaches, the University of Arkansas's Anna Egalite finds that athletic coaches in Florida mostly tend to perform just as well as their non-coaching counterparts, with respect to raising student test scores. We do not doubt that teachers who also coach face serious tradeoffs that likely come at the expense of time they could dedicate to their academic obligations. However, as with sporting events, athletic coaches gain additional opportunities for communicating and serving as mentors(□□) that potentially help students succeed and make up for the costs of coaching commitments.

M) If schools allow student-athletes to regularly miss out on instructional time for the sake of traveling to athletic competitions, that's bad. However, such issues would be better addressed by changing school and state policies with regard to the scheduling of sporting events as opposed to total elimination. If the empirical evidence points to anything, it points towards school-sponsored sports providing assets that are well worth the costs.

N) Despite negative stereotypes about sports culture and Ripley's presumption that academics and athletics are at odds with one another, we believe that the greater body of evidence shows that school-sponsored sports programs appear to benefit students. Successes on the playing field can carry over to the classroom and vice versa(□□□□). More importantly, finding ways to increase school communities' social capital is imperative to the success of the school as a whole, not just the athletes.

46. Students from low-income families have less access to off-campus sports programs.
47. Amanda Ripley argues that America should learn from other countries that rank high in international tests and lay less emphasis on athletics.
48. According to the author, Amanda Ripley fails to note that students' performance in exams varies from state to state.
49. Amanda Ripley thinks that athletic coaches are poor at classroom instruction.
- 50 James Coleman's later research makes an argument for a school's social capital.
51. Researchers find that there is a positive relationship between a school's commitment to athletics and academic achievements.
52. A rigorous study finds that athletic coaches also do well in raising students' test scores.
53. According to an evaluation, sports programs contribute to students' academic performance and character building.
54. Amanda Ripley believes the emphasis on school sports should be brought up when trying to understand why American students are mediocre.
55. James Coleman suggests in his earlier writings that school athletics would undermine a school's image.

☐ ☐ ☐ **Should Single-Sex Education Be**

Eliminated?

Should Single-Sex Education Be Eliminated?

[A] Why is a neuroscientist here debating single-sex schooling? Honestly, I had no fixed ideas on the topic when I started researching it for my book, *Pink Brain, Blue Brain*. But any discussion of gender differences in children inevitably leads to this debate, so I felt compelled to dive into the research data on single-sex schooling. I read every study I could, weighed the existing evidence, and ultimately concluded that single-sex education is not the answer to gender gaps in achievement - or the best way forward for today's young people. After my book was published, I met several developmental and cognitive psychologists whose work was addressing gender and education from different angles, and we published a peer-reviewed Education Forum piece in *Science* magazine with the provocative title, "The Pseudoscience of Single-Sex Education."

[B] We showed that three lines of research used to justify single-sex schooling - educational, neuroscience, and social psychology - all fail to support its

alleged benefits, and so the widely-held view that gender separation is somehow better for boys, girls, or both is nothing more than a myth.

The Research on Academic Outcomes

[C] First, we reviewed the extensive educational research that has compared academic outcomes in students attending single-sex versus coeducational schools. The overwhelming conclusion when you put this enormous literature together is that there is no clear academic advantage of sitting in all-female or all-male classes, in spite of much popular belief to the contrary. I base this conclusion not on any individual study, but on large-scale and systematic reviews of thousands of studies conducted in every major English-speaking country.

[D] Of course, there're many excellent single-sex schools out there, but as these careful research reviews have demonstrated, it's not their single-sex composition that makes them excellent. It's all the other advantages that are typically packed into such schools, such as financial resources, quality of the faculty, and pro-academic culture, along with the family background and pre-selected ability of the students themselves that determine their outcomes.

[E] A case in point is the study by Linda Sax at UCLA, who used data from a large national survey of college freshmen to evaluate the effect of single-sex versus coeducational high schools. Commissioned by the National Coalition of Girls' Schools, the raw findings look pretty good for the funders - higher SAT scores and a stronger academic orientation among women who had attended all girls' high schools (men weren't studied). However, once the researchers controlled for both student and school attributes - measures such as family income, parents' education, and school resources - most of these effects were erased or diminished.

[F] When it comes to boys in particular, the data show that single-sex education is distinctly unhelpful for them. Among the minority of studies that have reported advantages of single-sex schooling, virtually all of them were studies of girls. There're no rigorous studies in the United States that find single-sex schooling is better for boys, and in fact, a separate line of research by economists has shown both boys and girls exhibit greater cognitive growth over the school year based on the "dose" of girls in a classroom. In fact, boys benefit even more than girls from having larger numbers of female classmates. So single-sex schooling is really not the answer to the current "boy crisis" in education.

Brain and Cognitive Development

[G] The second line of research often used to justify single-sex education falls squarely within my area of expertise: brain and cognitive development. It's been more than a decade now since the "brain sex movement" began infiltrating(□□) our schools, and there are literally hundreds of schools caught up in the fad(□□). Public schools in Wisconsin, Indiana, Florida and many other states now proudly declare on their websites that they separate boys and girls because "research solidly indicates that boys and girls learn differently," due

to "hard-wired" differences in their brains, eyes, ears, autonomic nervous systems, and more.

[H] All of these statements can be traced to just a few would-be neuroscientists, especially physician Leonard Sax and therapist Michael Gurian. Each gives lectures, runs conferences, and does a lot of professional development on so-called "gender-specific learning." I analyzed their various claims about sex differences in hearing, vision, language, math, stress responses, and "learning styles" in my book and a long peer-reviewed paper. Other neuroscientists and psychologists have similarly exposed their work. In short, the mechanisms by which our brains learn language, math, physics, and every other subject don't differ between boys and girls. Of course, learning does vary a lot between individual students, but research reliably shows that this variance is far greater within populations of boys or girls than between the two sexes.

[I] The equal protection clause of the U.S. Constitution prohibits separation of students by sex in public education that's based on precisely this kind of "overbroad generalizations about the different talents, capacities, or preferences of males and females." And the reason it is prohibited is because it leads far too easily to stereotyping and sex discrimination.

Social Developmental Psychology

[J] Which brings me to the third area of research that fails to support single-sex schooling and indeed suggests the practice is actually harmful: social-developmental psychology.

[K] It is a well-proven finding in social psychology that segregation promotes stereotyping and prejudice, whereas intergroup contact reduces them - and the results are the same whether you divide groups by race, age, gender, body mass index, sexual orientation, or any other category. What's more, children are especially vulnerable to this kind of bias, because they are dependent on adults for learning which social categories are important and why we divide people into different groups.

[L] You don't have to look far to find evidence of stereotyping and sex discrimination in single-sex schools. There was the failed single-sex experiment in California, where six school districts used generous state grants to set up separate boys' and girls' academies in the late 1990s. Once boys and girls were segregated, teachers resorted to traditional gender stereotypes to run their classes, and within just three years, five of the six districts had gone back to coeducation.

[M] At the same time, researchers are increasingly discovering benefits of gender interaction in youth. A large British study found that children with other-sex older siblings(□□□□) exhibit less stereotypical play than children with same-sex older siblings, such as girls who like sports and building toys and boys who like art and dramatic play. Another study of high school social networks found less bullying and aggression the higher the density of mixed-sex friendships within a given adolescent network. Then there is the finding

we cited in our Science paper of higher divorce and depression rates among a large group of British men who attended single-sex schools as teenagers, which might be explained by the lack of opportunity to learn about relationships during their formative years.

[N] Whether in nursery school, high school, or the business world, gender segregation narrows our perceptions of each other, facilitating stereotyping and sexist attitudes. It's very simple: the more we structure children and adolescents' environment around gender distinctions and separation, the more they will use these categories as the primary basis for understanding themselves and others.

[O] Gender is an important issue in education. There are gaps in reading, writing, and science achievement that should be narrower. There are gaps in career choice that should be narrower - if we really want to maximize human potential and American economic growth. But stereotyping boys and girls and separating them in the name of fictitious(□□□) brain differences is never going to close these gaps.

46. Hundreds of schools separate boys from girls in class on the alleged brain and cognitive differences.

47. A review of extensive educational research shows no obvious academic advantage of single-sex schooling.

48. The author did not have any fixed ideas on single-sex education when she began her research on the subject.

49. Research found men who attended single-sex schools in their teens were more likely to suffer from depression.

50. Studies in social psychology have shown segregation in school education has a negative impact on children.

51. Reviews of research indicate there are more differences in brain and cognitive development within the same sex than between different sexes.

52. The findings of the national survey of college freshmen about the impact of single-sex schooling fail to take into account student and school attributes.

53. It wasn't long before most of the school districts that experimented with single-sex education abandoned the practice.

54. Boys from coeducational classes demonstrate greater cognitive abilities according to the economists' research.

55. As careful research reviews show, academic excellence in some single-sex schools is attributed to other factors than single-sex education.

2015 6

Plastic Surgery

Plastic Surgery

A better credit card is the solution to ever larger hack attacks

A) A thin magnetic strip (magstripe) is all that stands between your credit-card information and the bad guys. And they've been working hard to break in. That's why 2014 is shaping up as a major showdown: banks, law enforcement and technology companies are all trying to stop a network of hackers who are succeeding in stealing account numbers, names, email addresses and other crucial data used in identity theft. More than 100 million accounts at Target, Neiman Marcus and Michaels stores were affected in some way during the most recent attacks, starting last November.

B) Swipe() is the operative word: cards are increasingly vulnerable to attacks when you make purchases in a store. In several recent incidents, hackers have been able to obtain massive information of credit-, debit-() or prepaid-card numbers using malware, i.e. malicious software, inserted secretly into the retailers' point-of-sale system - the checkout registers. Hackers then sold the data to a second group of criminals operating in shadowy corners of the web. Not long after, the stolen data was showing up on fake cards and being used for online purchases.

C) The solution could cost as little as \$2 extra for every piece of plastic issued. The fix is a security technology used heavily outside the US. While American credit cards use the 40-year-old magstripe technology to process transactions, much of the rest of the world uses smarter cards with a technology called EMV (short for Europay, MasterCard, Visa) that employs a chip embedded in the card plus a customer PIN (personal identification number) to authenticate() every transaction on the spot. If a purchaser fails to punch in the correct PIN at the checkout, the transaction gets rejected. (Online purchases can be made by setting up a separate transaction code.)

D) Why haven't big banks adopted the more secure technology? When it comes to mailing out new credit cards, it's all about relative costs, says David Robertson, who runs the Nilson Report, an industry newsletter. "The cost of the card, putting the sticker on it, coding the account number and expiration date, embossing() it, the small envelope - all put together, you're in the dollar range." A chip-and-PIN card currently costs closer to \$3, says Robertson,

because of the price of chips. (Once large issuers convert together, the chip costs should drop.)

E) Multiply \$3 by the more than 5 billion magstripe credit and prepaid cards in circulation in the US. Then consider that there's an estimated \$12.4 billion in card fraud on a global basis, says Robertson. With 44% of that in the US, American credit-card fraud amounts to about \$5.5 billion annually. Card issuers have so far calculated that absorbing the liability for even big hacks like the Target one is still cheaper than replacing all that plastic.

F) That leaves American retailers pretty much alone the world over in relying on magstripe technology to charge purchases - and leaves consumers vulnerable. Each magstripe has three tracks of information, explains payments security expert Jeremy Gumbley, the chief technology officer of CreditCall, an electronic-payments company. The first and third are used by the bank or card issuer. Your vital account information lives on the second track, which hackers try to capture. "Malware is scanning through the memory in real time and looking for data," he says. "It creates a text file that gets stolen."

G) Chip-and-PIN cards, by contrast, make fake cards or skimming impossible because the information that gets scanned is encrypted(加密). The historical reason the US has stuck with magstripe, ironically enough, is once superior technology. Our cheap, ultra-reliable wired networks made credit-card authentication over the phone frictionless. In France, card companies created EMV in part because the telephone monopoly was so maddeningly inefficient and expensive. The EMV solution allowed transactions to be verified locally and securely.

H) Some big banks, like Wells Fargo, are now offering to convert your magstripe card to a chip-and-PIN model. (It's actually a hybrid(混合)) that will still have a magstripe, since most US merchants don't have EMV terminals.) Should you take them up on it? If you travel internationally, the answer is yes.

I) Keep in mind, too, that credit cards typically have better liability protection than debit cards. If someone uses your credit card fraudulently(非法使用), it's the issuer or merchant, not you, that takes the hit. Debit cards have different liability limits depending on the bank and the events surrounding any fraud. "If it's available, the logical thing is to get a chip-and-PIN card from your bank," says Eric Adamowsky, a co-founder of CreditCardInsider.com. "I would use credit cards over debit cards because of liability issues." Cash still works pretty well too.

J) Retailers and banks stand to benefit from the lower fraud levels of chip-and-PIN cards but have been reluctant for years to invest in the new infrastructure(基础设施) needed for the technology, especially if consumers don't have access to it. It's a chicken-and-egg problem: no one wants to spend the money on upgraded point-of-sale systems that can read the chip cards if shoppers aren't carrying them - yet there's little point in consumers' carrying the fancy plastic if stores aren't equipped to use them. (An earlier effort by

Target to move to chip and PIN never gained progress.) According to Gumbley, there's a "you-first mentality. The logjam(□□) has to be broken."

K) JPMorgan Chase CEO Jamie Dimon recently expressed his willingness to do so, noting that banks and merchants have spent the past decade suing each other over interchange fees - the percentage of the transaction price they keep - rather than deal with the growing hacking problem. Chase offers a chip-enabled card under its own brand and several others for travel-related companies such as British Airways and Ritz-Carlton.

L) The Target and Neiman hacks have also changed the cost calculation: although retailers have been reluctant to spend the \$6.75 billion that Capgemini consultants estimate it will take to convert all their registers to be chip-and-PIN-compatible, the potential liability they now face is dramatically greater. Target has been hit with class actions from hacked consumers. "It's the ultimate nightmare," a retail executive from a well-known chain admitted to TIME.

M) The card-payment companies MasterCard and Visa are pushing hard for change. The two firms have warned all parties in the transaction chain-merchant, network, bank - that if they don't become EMV - compliant by October 2015, the party that is least compliant will bear the fraud risk.

N) In the meantime, app-equipped smartphones and digital wallets - all of which can use EMV technology - are beginning to make inroads(□□) on cards and cash. PayPal, for instance, is testing an app that lets you use your mobile phone to pay on the fly at local merchants-without surrendering any card information to them. And further down the road is biometric authentication, which could be encrypted with, say, a fingerprint.

O) Credit and debit cards, though, are going to be with us for the foreseeable future, and so are hackers, if we stick with magstripe technology. "It seems crazy to me," says Gumbley, who is English, "that a cutting-edge-technology country is depending on a 40-year-old technology." That's why it may be up to consumers to move the needle on chip and PIN. Says Robertson: "When you get the consumer into a position of worry and inconvenience, that's where the rubber hits the road."

46. It is best to use an EMV card for international travel.

47. Personal information on credit and debit cards is increasingly vulnerable to hacking.

48. The French card companies adopted EMV technology partly because of inefficient telephone service.

49. While many countries use the smarter EMV cards, the US still clings to its old magstripe technology.

50. Attempts are being made to prevent hackers from carrying out identity theft.

51. Credit cards are much safer to use than debit cards.

52. Big banks have been reluctant to switch to more secure technology because of the higher costs involved.

53. The potential liability for retailers using magstripe is far more costly than upgrading their registers.
54. The use of magstripe cards by American retailers leaves consumers exposed to the risks of losing account information.
55. Consumers will be a driving force behind the conversion from magstripe to EMV technology.

□□□ Inequality Is Not Inevitable

Inequality Is Not Inevitable

- A) A dangerous trend has developed over this past third of a century. A country that experienced shared growth after World War II began to tear apart, so much so that when the Great Recession hit in late 2007, one could no longer ignore the division that had come to define the American economic landscape. How did this "shining city on a hill" become the advanced country with the greatest level of inequality?
- B) Over the past year and a half, *The Great Divide*, a series in *The New York Times*, has presented a wide range of examples that undermine the notion that there are any truly fundamental laws of capitalism. The dynamics of the imperial capitalism of the 19th century needn't apply in the democracies of the 21st. We don't need to have this much inequality in America.
- C) Our current brand of capitalism is a fake capitalism. For proof of this go back to our response to the Great Recession, where we socialized losses, even as we privatized gains. Perfect competition should drive profits to zero, at least theoretically, but we have monopolies making persistently high profits. C.E.O.s enjoy incomes that are on average 295 times that of the typical worker, a much higher ratio than in the past, without any evidence of a proportionate increase in productivity.
- D) If it is not the cruel laws of economics that have led to America's great divide, what is it? The straightforward answer: our policies and our politics. People get tired of hearing about Scandinavian success stories, but the fact of the matter is that Sweden, Finland and Norway have all succeeded in having about as much or faster growth in per capita(□□□) incomes than the United States and with far greater equality.
- E) So why has America chosen these inequality-enhancing policies? Part of the answer is that as World War II faded into memory, so too did the solidarity it had created. As America triumphed in the Cold War, there didn't seem to be a real competitor to our economic model. Without this international competition, we no longer had to show that our system could deliver for most of our citizens.
- F) Ideology and interests combined viciously. Some drew the wrong lesson

from the collapse of the Soviet system in 1991. The pendulum swung from much too much government there to much too little here. Corporate interests argued for getting rid of regulations, even when those regulations had done so much to protect and improve our environment, our safety, our health and the economy itself.

G) But this ideology was hypocritical(□□□). The bankers, among the strongest advocates of laissez-faire(□□□□□) economics, were only too willing to accept hundreds of billions of dollars from the government in the aid programs that have been a recurring feature of the global economy since the beginning of the Thatcher-Reagan era of "free" markets and deregulation.

H) The American political system is overrun by money. Economic inequality translates into political inequality, and political inequality yields increasing economic inequality. So corporate welfare increases as we reduce welfare for the poor. Congress maintains subsidies for rich farmers as we cut back on nutritional support for the needy. Drug companies have been given hundreds of billions of dollars as we limit Medicaid benefits. The banks that brought on the global financial crisis got billions while a tiny bit went to the homeowners and victims of the same banks' predatory(□□□□) lending practices. This last decision was particularly foolish. There were alternatives to throwing money at the banks and hoping it would circulate through increased lending.

I) Our divisions are deep. Economic and geographic segregation has immunized those at the top from the problems of those down below. Like the kings of ancient times, they have come to perceive their privileged positions essentially as a natural right.

J) Our economy, our democracy and our society have paid for these gross inequalities. The true test of an economy is not how much wealth its princes can accumulate in tax havens(□□□), but how well off the typical citizen is. But average incomes are lower than they were a quarter-century ago. Growth has gone to the very, very top, whose share has almost increased four times since 1980. Money that was meant to have trickled(□ □) down has instead evaporated in the agreeable climate of the Cayman Islands.

K) With almost a quarter of American children younger than 5 living in poverty, and with America doing so little for its poor, the deprivations of one generation are being visited upon the next. Of course, but why is America one of the advanced countries where the life prospects of the young are most sharply determined by the income and education of their parents?

L) Among the most bitter stories in The Great Divide were those that portrayed the frustrations of the young, who long to enter our shrinking middle class. Soaring tuitions and declining incomes have resulted in larger debt burdens. Those with only a high school diploma have seen their incomes decline by 13 percent over the past 35 years.

M) Where justice is concerned, there is also a huge divide. In the eyes of the rest of the world and a significant part of its own population, mass imprisonment has come to define America-a country, it bears repeating, with

about 5 percent of the world's population but around a fourth of the world's prisoners.

N) Justice has become a commodity, affordable to only a few. While Wall Street executives used their expensive lawyers to ensure that their ranks were not held accountable for the misdeeds that the crisis in 2008 so graphically revealed, the banks abused our legal system to foreclose() on mortgages and eject tenants, some of whom did not even owe money.

O) More than a half-century ago, America led the way in advocating for the Universal Declaration of Human Rights, adopted by the United Nations in 1948. Today, access to health care is among the most universally accepted rights, at least in the advanced countries. America, despite the implementation of the Affordable Care Act, is the exception. In the relief that many felt when the Supreme Court did not overturn the Affordable Care Act, the implications of the decision for Medicaid were not fully appreciated. Obamacare's objective - to ensure that all Americans have access to health care - has been blocked: 24 states have not implemented the expanded Medicaid program, which was the means by which Obamacare was supposed to deliver on its promise to some of the poorest.

P) We need not just a new war on poverty but a war to protect the middle class. Solutions to these problems do not have to be novel. Far from it. Making markets act like markets would be a good place to start. We must end the rent-seeking society we have gravitated toward, in which the wealthy obtain profits by manipulating the system.

Q) The problem of inequality is not so much a matter of technical economics. It's really a problem of practical politics. Inequality is not just about the top marginal tax rate but also about our children's access to food and the right to justice for all. If we spent more on education, health and infrastructure(), we would strengthen our economy, now and in the future.

46. In theory, free competition is supposed to reduce the margin of profits to the minimum.

47. The United States is now characterized by a great division between the rich and the poor.

48. America lacked the incentive to care for the majority of its citizens as it found no rival for its economic model.

49. The wealthy top have come to take privileges for granted.

50. Many examples show the basic laws of imperial capitalism no longer apply in present-day America.

51. The author suggests a return to the true spirit of the market.

52. A quarter of the world's prisoner population is in America.

53. Government regulation in America went from one extreme to the other in the past two decades.

54. Justice has become so expensive that only a small number of people like corporate executives can afford it.

55. No country in the world so far has been able to provide completely equal

opportunities for all.

□□□ Why the Mona Lisa Stands Out

Why the Mona Lisa Stands Out

A) Have you ever fallen for a novel and been amazed not to find it on lists of great books? Or walked around a sculpture renowned as a classic, struggling to see what the fuss is about? If so, you've probably pondered the question a psychologist, James Cutting, asked himself: How does a work of art come to be considered great?

B) The intuitive answer is that some works of art are just great: of intrinsically superior quality. The paintings that win prime spots in galleries, get taught in classes and reproduced in books are the ones that have proved their artistic value over time. If you can't see they're superior, that's your problem. It's an intimidatingly neat explanation. But some social scientists have been asking awkward questions of it, raising the possibility that artistic canons(□□□□) are little more than fossilised historical accidents.

C) Cutting, a professor at Cornell University, wondered if a psychological mechanism known as the "mere-exposure effect" played a role in deciding which paintings rise to the top of the cultural league. Cutting designed an experiment to test his hunch(□□). Over a lecture course he regularly showed undergraduates works of impressionism for two seconds at a time. Some of the paintings were canonical, included in art-history books. Others were lesser known but of comparable quality. These were exposed four times as often. Afterwards, the students preferred them to the canonical works, while a control group of students liked the canonical ones best. Cutting's students had grown to like those paintings more simply because they had seen them more.

D) Cutting believes his experiment offers a clue as to how canons are formed. He points out that the most reproduced works of impressionism today tend to have been bought by five or six wealthy and influential collectors in the late 19th century. The preferences of these men bestowed(□□) prestige on certain works, which made the works more likely to be hung in galleries and printed in collections. The fame passed down the years, gaining momentum from mere exposure as it did so. The more people were exposed to, the more they liked it, and the more they liked it, the more it appeared in books, on posters and in big exhibitions. Meanwhile, academics and critics created sophisticated justifications for its preeminence(□□). After all, it's not just the masses who tend to rate what they see more often more highly. As contemporary artists like Warhol and Damien Hirst have grasped, critics' praise is deeply entwined(□□) with publicity. "Scholars", Cutting argues, "are no different from the public in the effects of mere exposure."

E) The process described by Cutting evokes a principle that the sociologist Duncan Watts calls "cumulative advantage": once a thing becomes popular, it will tend to become more popular still. A few years ago, Watts, who is employed by Microsoft to study the dynamics of social networks, had a similar experience to Cutting's in another Paris museum. After queuing to see the "Mona Lisa" in its climate-controlled bulletproof box at the Louvre, he came away puzzled: why was it considered so superior to the three other Leonardos in the previous chamber, to which nobody seemed to be paying the slightest attention?

F) When Watts looked into the history of "the greatest painting of all time", he discovered that, for most of its life, the "Mona Lisa" remained in relative obscurity. In the 1850s, Leonardo da Vinci was considered no match for giants of Renaissance art like Titian and Raphael, whose works were worth almost ten times as much as the "Mona Lisa". It was only in the 20th century that Leonardo's portrait of his patron's wife rocketed to the number-one spot. What propelled it there wasn't a scholarly re-evaluation, but a theft.

G) In 1911 a maintenance worker at the Louvre walked out of the museum with the "Mona Lisa" hidden under his smock(□□□). Parisians were shocked at the theft of a painting to which, until then, they had paid little attention. When the museum reopened, people queued to see the gap where the "Mona Lisa" had once hung in a way they had never done for the painting itself. From then on, the "Mona Lisa" came to represent Western culture itself.

H) Although many have tried, it does seem improbable that the painting's unique status can be attributed entirely to the quality of its brushstrokes. It has been said that the subject's eyes follow the viewer around the room. But as the painting's biographer, Donald Sassoon, dryly notes, "In reality the effect can be obtained from any portrait." Duncan Watts proposes that the "Mona Lisa" is merely an extreme example of a general rule. Paintings, poems and pop songs are buoyed(□□□) or sunk by random events or preferences that turn into waves of influence, passing down the generations.

I) "Saying that cultural objects have value," Brian Eno once wrote, "is like saying that telephones have conversations." Nearly all the cultural objects we consume arrive wrapped in inherited opinion; our preferences are always, to some extent, someone else's. Visitors to the "Mona Lisa" know they are about to visit the greatest work of art ever and come away appropriately impressed - or let down. An audience at a performance of "Hamlet" know it is regarded as a work of genius, so that is what they mostly see. Watts even calls the preeminence of Shakespeare a "historical accident".

J) Although the rigid high-low distinction fell apart in the 1960s, we still use culture as a badge of identity. Today's fashion for eclecticism(□□□□) - "I love Bach, Abba and Jay Z" - is, Shamus Khan, a Columbia University psychologist, argues, a new way for the middle class to distinguish themselves from what they perceive to be the narrow tastes of those beneath them in the social hierarchy.

K) The intrinsic quality of a work of art is starting to seem like its least important attribute. But perhaps it's more significant than our social scientists allow. First of all, a work needs a certain quality to be eligible to be swept to the top of the pile. The "Mona Lisa" may not be a worthy world champion, but it was in the Louvre in the first place, and not by accident. Secondly, some stuff is simply better than other stuff. Read "Hamlet" after reading even the greatest of Shakespeare's contemporaries, and the difference may strike you as unarguable.

L) A study in the British Journal of Aesthetics suggests that the exposure effect doesn't work the same way on everything, and points to a different conclusion about how canons are formed. The social scientists are right to say that we should be a little sceptical of greatness, and that we should always look in the next room. Great art and mediocrity(平庸) can get confused, even by experts. But that's why we need to see, and read, as much as we can. The more we're exposed to the good and the bad, the better we are at telling the difference. The eclecticists have it.

46. According to Duncan Watts, the superiority of the "Mona Lisa" to Leonardo's other works resulted from the cumulative advantage.

47. Some social scientists have raised doubts about the intrinsic value of certain works of art.

48. It is often random events or preferences that determine the fate of a piece of art.

49. In his experiment, Cutting found that his subjects liked lesser known works better than canonical works because of more exposure.

50. The author thinks the greatness of an art work still lies in its intrinsic value.

51. It is true of critics as well as ordinary people that the popularity of artistic works is closely associated with publicity.

52. We need to expose ourselves to more art and literature in order to tell the superior from the inferior.

53. A study of the history of the greatest paintings suggests even a great work of art could experience years of neglect.

54. Culture is still used as a mark to distinguish one social class from another.

55. Opinions about and preferences for cultural objects are often inheritable.

2015 12

Climate change may be real, but it's still not easy being green.

Climate change may be real, but it's still not easy being green.

How do we convince our inner caveman to be greener? We ask some outstanding social scientists.

A) The road to climate hell is paved with our good intentions. Politicians may tackle polluters while scientists do battle with carbon emissions. But the most pervasive problem is less obvious: our own behaviour. We get distracted before we can turn down the heating. We break our promise not to fly after hearing about a neighbour's trip to India. Ultimately, we can't be bothered to change our attitude. Fortunately for the planet, social science and behavioural economics may be able to do that for us.

B) Despite mournful polar bears and charts showing carbon emissions soaring, most people find it hard to believe that global warming will affect them personally. Recent polls by the Pew Research Centre in Washington, DC, found that 75-80 percent of participants regarded climate change as an important issue. But respondents ranked it last on a list of priorities.

C) This inconsistency largely stems from a feeling of powerlessness. "When we can't actually remove the source of our fear, we tend to adapt psychologically by adopting a range of defence mechanisms," says Tom Crompton, change strategist for the environmental organization World Wide Fund for Nature.

D) Part of the fault lies with our inner caveman. Evolution has programmed humans to pay most attention to issues that will have an immediate impact. "We worry most about now because if we don't survive for the next minute, we're not going to be around in ten years' time," says Professor Elke Weber of the Centre for Research on Environmental Decisions at Columbia University in New York. If the Thames were lapping around Big Ben, Londoners would face up to the problem of emissions pretty quickly. But in practice, our brain discounts the risks - and benefits - associated with issues that lie some way ahead.

E) Matthew Rushworth, of the Department of Experimental Psychology at the

University of Oxford, sees this in his lab every day. "One of the ways in which all agents seem to make decisions is that they assign a lower weighting to outcomes that are going to be further away in the future," he says. "This is a very sensible way for an animal to make decisions in the wild and would have been very helpful for humans for thousands of years."

F) Not any longer. By the time we wake up to the threat posed by climate change, it could well be too late. And if we're not going to make rational decisions about the future, others may have to help us to do so.

G) Few political libraries are without a copy of *Nudge: Improving Decisions About Health, Wealth and Happiness*, by Richard Thaler and Cass Sunstein. They argue that governments should persuade us into making better decisions - such as saving more in our pension plans - by changing the default options. Professor Weber believes that environmental policy can make use of similar tactics. If, for example, building codes included green construction guidelines, most developers would be too lazy to challenge them.

H) Defaults are certainly part of the solution. But social scientists are most concerned about crafting messages that exploit our group mentality(□□). "We need to understand what motivates people, what it is that allows them to make change," says Professor Neil Adger, of the Tyndall Centre for Climate Change Research in Norwich. "It is actually about what their peers think of them, what their social norms are, what is seen as desirable in society." In other words, our inner caveman is continually looking over his shoulder to see what the rest of the tribe are up to.

I) The passive attitude we have to climate change as individuals can be altered by counting us in - and measuring us against - our peer group. "Social norms are primitive and elemental," says Dr. Robert Cialdini, author of *Influence: The Psychology of Persuasion*. "Birds flock together, fish school together, cattle herd together... just perceiving norms is enough to cause people to adjust their behaviour in the direction of the crowd."

J) These norms can take us beyond good intentions. Cialdini conducted a study in San Diego in which coat hangers bearing messages about saving energy were hung on people's doors. Some of the messages mentioned the environment, some financial savings, others social responsibility. But it was the ones that mentioned the actions of neighbours that drove down power use.

K) Other studies show that simply providing the facility for people to compare their energy use with the local average is enough to cause them to modify their behaviour. The Conservatives plan to adopt this strategy by making utility companies print the average local electricity and gas usage on people's bills.

L) Social science can also teach politicians how to avoid our collective capacity for self-destructive behaviour. Environmental campaigns that tell us how many people drive SUVs unwittingly(□□□□) imply that this behaviour is widespread and thus permissible. Cialdini recommends some careful framing

of the message. "Instead of normalizing the undesirable behaviour, the message needs to marginalize it, for example, by stating that if even one person buys yet another SUV, it reduces our ability to be energy-independent."

M) Tapping into how we already see ourselves is crucial. The most successful environmental strategy will marry the green message to our own sense of identity. You're your average trade union member, chances are they will be politically motivated and be used to collective action - much like Erica Gregory. Are tired member of the Public and Commercial Services Union, she is setting up one of 1,100 action groups with the support of Climate Solidarity, a two-year environmental campaign aimed at trade unionists.

N) Erica is proof that a great-grandmother can help to lead the revolution if you get the psychology right - in this case, by matching her enthusiasm for the environment with a fondness for organizing groups. "I think it's a terrific idea," she says of the campaign. "The union backing it makes members think there must be something in it." She is expecting up to 20 people at the first meeting she has called, at her local pub in the Cornish village of Polperro.

O) Nick Perks, project director for Climate Solidarity, believes this sort of activity is where the future of environmental action lies. "Using existing civil society structures or networks is a more effective way of creating change... and obviously trade unions are one of the biggest civil society networks in the UK," he says. The "Love Food, Hate Waste" campaign entered into a collaboration last year with another such network - the Women's Institute. Londoner Rachel Taylor joined the campaign with the aim of making new friends. A year on, the meetings have made lasting changes to what she throws away in her kitchen. "It's always more of an incentive if you're doing it with other people," she says. "It motivates you more if you know that you've got to provide feedback to a group."

P) The power of such simple psychology in fighting climate change is attracting attention across the political establishment. In the US, the House of Representatives Science Committee has approved a bill allocating \$10 million a year to studying energy-related behaviour. In the UK, new studies are in development and social scientists are regularly spotted in British government offices. With the help of psychologists, there is fresh hope that we might go green after all.

46. When people find they are powerless to change a situation, they tend to live with it.

47. To be effective, environmental message should be carefully framed.

48. It is the government's responsibility to persuade people into making environment-friendly decisions.

49. Politicians are beginning to realize the importance of enlisting psychologists' help in fighting climate change.

50. To find effective solutions to climate change, it is necessary to understand what motivates people to make change.

51. In their evolution, humans have learned to pay attention to the most urgent issues instead of long-term concerns.
52. One study shows that our neighbours' actions are influential in changing our behaviour.
53. Despite clear signs of global warming, it is not easy for most people to believe climate change will affect their own lives.
54. We should take our future into consideration in making decisions concerning climate change before it is too late.
55. Existing social networks can be more effective in creating change in people's behaviour.

□ □ □ The Impossibility of Rapid Energy

Transitions

The Impossibility of Rapid Energy Transitions

A) Politicians are fond of promising rapid energy transitions. Whether it is a transition from imported to domestic oil or from coal-powered electricity production to natural-gas power plants, politicians love to talk big. Unfortunately for them (and often the taxpayers), our energy systems are a bit like an air craft carrier: they are unbelievably expensive, they are built to last for a very long time, they have a huge amount of inertia (meaning it takes a lot of energy to set them moving), and they have a lot of momentum once they are set in motion. No matter how hard you try, you can't turn something that large on a dime(10 □□□□), or even a few thousand dimes.

B) In physics, moving objects have two characteristics relevant to understanding the dynamics of energy systems: inertia and momentum. Inertia is the resistance of objects to efforts to change their state of motion. If you try to push a boulder(□□□), it pushes you back. Once you have started the boulder rolling, it develops momentum, which is defined by its mass and velocity. Momentum is said to be "conserved," that is, once you build it up, it has to go somewhere. So a heavy object, like a football player moving at a high speed, has a lot of momentum - that is, once he is moving, it is hard to change his state of motion. If you want to change his course, you have only a few choices: you can stop him, transferring (possibly painfully) some of his kinetic energy(□□) to your own body, or you can approach alongside and slowly apply pressure to gradually alter his course.

C) But there are other kinds of momentum as well. After all, we don't speak only of objects or people a shaving momentum; we speak of entire systems having momentum. Whether it's a sports team or a presidential campaign,

everybody relishes having the big momentum, because it makes them harder to stop or change direction.

D) One kind of momentum is technological momentum. When a technology is deployed, its impacts reach far beyond itself. Consider the incandescent() bulb, an object currently hated by many environmentalists and energy-efficiency advocates. The incandescent light bulb, invented by Thomas Edison, which came to be the symbol of inspiration, has been developed into hundreds, if not thousands, of forms. Today, a visit to a lighting store reveals a stunning array of choices. There are standard-shaped bulbs, flame-shaped bulbs, colored globe-shaped bulbs, and more. It is quite easy, with all that choice, to change a light bulb.

E) But the momentum of incandescent lighting does not stop there. All of those specialized bulbs led to the building of specialized light fixtures, from the desk lamp you study by, to the ugly but beloved hand-painted Chinese lamp you inherited from your grandmother, to the ceiling fixture in your closet, to the light in your oven or refrigerator, and to the light that the dentist points at you. It is easy to change a light bulb, sure, but it is harder to change the bulb and its fixture.

F) And there is more to the story, because not only are the devices that house incandescent bulbs shaped to their underlying characteristics, but rooms and entire buildings have been designed in accordance with how incandescent lighting reflects off walls and windows.

G) As lighting expert Howard Brandston points out, "Generally, there are no bad light sources, only bad applications." There are some very commendable characteristics of the CFL compact fluorescent() light bulb, yet the selection of any light source remains inseparable from the luminaire() that houses it, along with the space in which both are installed, and lighting requirements that need to be satisfied. The lamp, the fixture, and the room, all three must work in concert for the true benefits of end-users. If the CFL should be used for lighting a particular space, or an object with in that space, the fixture must be designed to work with that lamp, and that fixture with the room, it is a symbiotic() relationship. A CFL cannot be simply installed in an incandescent fixture and then expected to produce a visual appearance that is more than washed out, foggy, and dim. The whole fixture must be replaced - light source and luminaire - and this is never an inexpensive proposition.

H) And Brandston knows a thing or two about lighting, being the man who illuminated the Statue of Liberty.

I) Another type of momentum we have to think about when planning for changes in our energy systems is labor-pool momentum. It is one thing to say that we are going to shift 30 percent of our electricity supply from, say, coal to nuclear power in 20 years. But it is another thing to have a supply of trained talent that could let you carry out this promise. That is because the engineers, designers, regulators, operators, and all of the other skilled people needed for

the new energy industry are specialists who have to be trained first(or retrained, if they are the ones being laid off in some related industry), and education, like any other complicated endeavor, takes time. And not only do our prospective new energy workers have to be trained, they have to be trained in the right sequence. One needs the designers, and perhaps the regulators, before the builders and operators, and each group of workers in training has to know there is work waiting beyond graduation. In some cases, colleges and universities might have to change their training programs, adding another layer of difficulty.

J) By far the biggest type of momentum that comes into play when it comes to changing our energy systems is economic momentum. The major components of our energy systems, such as fuel production, refining, electrical generation and distribution, are costly installations that have lengthy lifespans. They have to operate for long periods of time before the costs of development have been recovered. When investors put up money to build, say, a nuclear power plant, they expect to earn that money back over the planned life of the plant, which is typically between 40 and 60 years. Some coal power plants in the United States have operated for more than 70 years! The oldest continuously operated commercial hydro-electric plant in the United States is on New York's Hudson River, and it went into commercial service in 1898.

K) As Vaclav Smil points out, "All the forecasts, plans, and anticipations cited above have failed so miserably because their authors and promoters thought the transitions they hoped to implement would proceed unlike all previous energy transitions, and that their progress could be accelerated in an unprecedented manner."

L) When you hear people speaking of making a rapid transition toward any type of energy, whether it is a switch from coal to nuclear power, or a switch from gasoline-powered cars to electric cars, or even a switch from an incandescent to a fluorescent light, understanding energy system inertia and momentum can help you decide whether their plans are feasible.

46. Not only moving objects and people but all systems have momentum.

47. Changing the current energy system requires the systematic training of professionals and skilled labor.

48. Changing a light bulb is easier than changing the fixture housing it.

49. Efforts to accelerate the current energy transitions didn't succeed as expected.

50. To change the light source is costly because you have to change the whole fixture.

51. Energy systems, like an aircraft carrier set in motion, have huge momentum.

52. The problem with lighting, if it arises, often doesn't lie in light sources but in their applications.

53. The biggest obstacle to energy transition is that the present energy system is too expensive to replace.

54. The application of a technology can impact areas beyond itself.
55. Physical characteristics of moving objects help explain the dynamics of energy systems.

□ □ □ **First-Generation College-Goers:**

Unprepared and Behind

First-Generation College-Goers: Unprepared and Behind

Kids who are the first in their families to brave the world of higher education come on campus with little academic know-how and are much more likely than their peers to drop out before graduation.

A) When Nijay Williams entered college last fall as a first-generation student and Jamaican immigrant, he was academically unprepared for the rigors of higher education. Like many first-generation students, he enrolled in a medium-sized state university many of his high school peers were also attending, received a Pell Grant, and took out some small federal loans to cover other costs. Given the high price of room and board and the closeness of the school to his family, he chose to live at home and worked between 30 and 40 hours a week while taking a full class schedule.

B) What Nijay didn't realize about his school - Tennessee State University - was its frighteningly low graduation rate: a mere 29 percent for its first-generation students. At the end of his first year, Nijay lost his Pell Grant of over \$5,000 after narrowly missing the 2.0 GPA cut-off, making it impossible for him to continue paying for school.

C) Nijay represents a large and growing group of Americans: first-generation college students who enter school unprepared or behind. To make matters worse, these schools are ill-equipped to graduate these students-young adults who face specific challenges and obstacles. They typically carry financial burdens that outweigh those of their peers, are more likely to work while attending school, and often require significant academic remediation(□□).

D) Matt Rubinoff directs I'm First, a nonprofit organization launched last October to reach out to this specific population of students. He hopes to distribute this information and help prospective college-goers find the best post-secondary fit. And while Rubinoff believes there are a good number of four-year schools that truly care about these students and set aside significant resources and programs for them, he says that number isn't high enough.

E) "It's not only the selective and elite institutions that provide those opportunities for a small subset of this population," Rubinoff said, adding that a majority of first-generation undergraduates tend toward options such as

online programs, two-year colleges, and commuter state schools. "Unfortunately, there tends to be a lack of information and support to help students think bigger and broader."

F) Despite this problem, many students are still drawn to these institutions - and two-year schools in particular. As a former high school teacher, I saw students choose familiar, cheaper options year after year. Instead of skipping out on higher education altogether, they chose community colleges or state schools with low bars for admittance.

G) "They underestimate themselves when selecting a university," said Dave Jarrat, a marketing executive for Inside Track, a for-profit organization that specializes in coaching low-income students and supporting colleges in order to help students thrive. "The reality of it is that a lot of low-income kids could be going to elite universities on a full ride scholarship and don't even realize it."

H) "Many students are coming from a situation where no one around them has the experience of successfully completing higher education, so they are coming in questioning themselves and their college worthiness," Jarrat continued. That helps explain why, as I'm First's Rubinoff indicated, the schools to which these students end up resorting can end up being some of the poorest matches for them. The University of Tennessee in Knoxville offers one example of this dilemma. A flagship university in the South, the school graduates just 16 percent of its first-generation students, despite its overall graduation rate of 71 percent. Located only a few hours apart. The University of Tennessee and Tennessee State are worth comparing. Tennessee State's overall graduation rate is a tiny 39 percent, but at least it has a smaller gap between the outcomes for first-generation students and those of their peers.

I) Still, the University of Tennessee deserves credit for being transparent. Many large institutions keep this kind of data secret - or at least make it incredibly difficult to find. The University of North Carolina at Chapel Hill, for instance, admits only that the graduation rate for its first-generation pupils is "much lower" than the percentage of all students who graduate within four years (81 percent).

J) It is actually quite difficult to find reliable statistics on the issue for many schools. Higher education institutions are, under federal law, required to report graduation rates, but these reports typically only include Pell recipient numbers - not necessarily rates specific to first-generation students. Other initiatives fail to break down the data, too. Imagine how intimidating it can be for prospective students unfamiliar with the complexities of higher education to navigate this kind of information and then identify which schools are the best fit.

K) It was this lack of information that prompted the launch of I'm First in 2013, originally as an arm of its umbrella organization, the Center For Student Opportunity. "If we can help to direct students to more of these types of campuses and help students to understand them to be realistic and accessible

places, have them apply to these schools at greater frequency and ultimately get in and enroll, we are going to raise the success rate," Rubinoff said, citing a variety of colleges ranging from large state institutions to smaller private schools.

L) Chelsea Jones, who now directs student programming at I'm First, was a first-generation college student at Howard. Like other students new to the intimidating higher-education world, she often struggled on her path to college. "There wasn't really a college-bound culture at my high school," she said. "I wanted to go to college but I didn't really know the process." Jones became involved with a college-access program through Princeton University in high school. Now she attributes much of her understanding of college to that: "But once I got to campus, it was a completely different ball game that no one really prepared me for."

M) She was fortunate, though. Howard, a well-regarded historically black college, had an array of resources for its first-generation students, including matching kids with counselors, connecting first-generation students to one another, and TRIO, a national program that supported 200 students on Howard's campus. Still, Jones represents a small percentage of first-generation students who are able to gain entry into more elite universities, which are often known for robust financial aid packages and remarkably high graduation rates for first-generation students. (Harvard, for example, boasts a six-year graduation rate for underrepresented minority groups of 98 percent.)

N) Christian Vazquez, a first-generation Yale graduate, is another exception, his success story setting him far apart from students such as Nijay. "There is a lot of support at Yale, to an extent, after a while, there is too much support," he said, half-joking about the countless resources available at the school. Students are placed in small groups with counselors (trained seniors on campus); they have access to cultural and ethnic affinity() groups, tutoring centers and also have a summer orientation specifically for first-generation students (the latter being one of the most common programs for students).

O) "Our support structure was more like: 'You are going to get through Yale; you are going to do well,'" he said, hinting at mentors(), staff, and professors who all provided significant support for students who lacked confidence about "belonging" at such a top institution.

46. Many first-generation college-goers have doubts about their abilities to get a college degree.

47. First-generation college students tend to have much heavier financial burdens than their peers.

48. The graduation rate of first-generation students at Nijay's university was incredibly low.

49. Some top institutions like Yale seem to provide first-generation students with more support than they actually need.

50. On entering college, Nijay Williams had no idea how challenging college education was.

51. Many universities simply refuse to release their exact graduation rates for first-generation students.
52. According to a marketing executive, many students from low-income families don't know they could have a chance of going to an elite university.
53. Some elite universities attach great importance to building up the first-generation students' self-confidence.
54. I'm First distributes information to help first-generation college-goers find schools that are most suitable for them.
55. Elite universities tend to graduate first-generation students at a higher rate.



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